

REMARKS

Claims 2-12, 22-27, 32, 34-45 and 47-52 are presently pending in the above-referenced application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the following remarks.

REQUEST FOR CONTINUED EXAMINATION

Concurrently with this response Applicants have filed a Request for Continued Examination to remove the finality of the Examiner's rejections.

REJECTION UNDER 35 U.S.C. § 112

Claims 2-12, 22-27, 32-45 and 49-51 are rejected under the first paragraph of 35 U.S.C. § 112 as failing to comply with the written description requirement. The Examiner states that the claims "contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention."

In making this rejection, the Examiner takes issue with the phrase "to enable unobstructed lateral movement of the forming tool from the material-contacting area across the boundary", deeming it to be new matter. In particular, the Examiner notes that "there is no mention of how the forming tool (400 or 402) engages the metal sheet materials (A and B), the degree or amount of access of the forming tool (400 or 402) to the material (A and B), or enabling unobstructed lateral movement of the forming tool (400 or 402) in the manner recited in applicant's claims." The Examiner also notes that

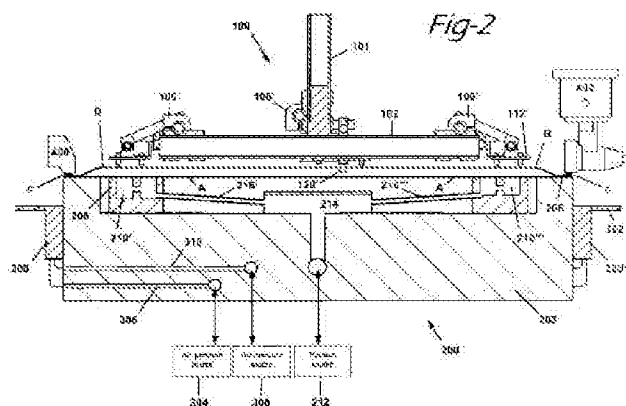
the drawing which show the forming tools (400 and 402) engaging the metal sheet materials (A and B), do not show how such tools are moved into engagement with the materials.”

Applicant respectfully traverses this rejection. Applicant submits that the written description when considered by a person of ordinary skill in the art would recognize that the inventor was in possession of the claimed subject matter, and in particular “a lower nest including ...[an] upper surface having a generally flat material-contacting area extending to a boundary of the upper surface to enable unobstructed lateral movement of the forming tool from the material-contacting area across the boundary...” In support of this position, Applicant refers to the specification and drawings as originally filed in view as the understanding of a person of ordinary skill in the art

In the specification, Applicant discusses the known practice of using side gauges to align and hold two sheets during the forming operation, and the problem associated with this practice. “Importantly, during operation, the gauges interfere with the travel of the forming tool. In some instances, if the gauges are spring-loaded, the rolling tool may be shocked and may suffer a pressure bounce when struck.” See, ¶[0005]. Applicant notes in the “Summary of the Present Invention” that “a method and apparatus [is provided] that overcomes the problems of know techniques for forming and joining a first sheet material to a second sheet material...” ¶[0008]. With reference to FIG. 2, the specification describes the lower nest **200** generally including a frame **202** and a vacuum assembly **204**. See, ¶[0035]. “The frame **202** includes an upper surface area **206** which provides support during the forming operation of the first sheet material **A** with the second sheet material **B** as is known in the art...” *Id.*

With reference to FIG 2., the specification also describes the crowder assemblies **300, 300', 300'', 300'''** as include a finger **302** pivotally movable between a vertical aligning position and a horizontal disengaged position. See, ¶[0039]. The written description further explains the forming operation in which the fingers **302** are moved away from the upper surface area **206**. “Thus positioned, **the fingers will not interfere with the subsequent forming operation.**” ¶[0049] (emphasis added). “The joining operation then occurs, by which the upstanding flanges of material A are formed over onto material B resulting in clinched formation c. Formation c thus resides **around part of or the entire periphery** of the joined first sheet material A and the second sheet material B.” ¶[0050] (emphasis added). See, U.S. Patent No. 5,228,190 to Sawa, col. 5, lines 18-47. (general understanding of how a roller-type tool engages the sheet metal and movement of the tool with respect to the lower die).

FIG.2, reproduced below, further supports the recognition of a lower nest **200** in combination with a vacuum system **204** positioned within the boundary of the upper surface area **206** which securely holds the sheet materials **A, B** while providing lateral access for a forming tool **400, 402** without obstruction by the upper gate **100**, the crowders **300** or other structure supporting the sheet materials **A,B**.



The written description demonstrates not only a recognition of the need for a system with adequate clamping ability and an unimpeded tool path but also a structure which “enable[s] unobstructed lateral movement of the forming tool from the material-contacting area across the boundary.” For these reasons, Applicant submits that the application as originally filed, and the prosecution record as a whole demonstrates that the written description requirement is satisfied.

Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection under 35 U.S.C. § 112, ¶1. Applicant submits that Claims 2-12, 22-27, 32, 34-45 and 49-51 are in condition for allowance.

REJECTION UNDER 35 U.S.C. § 103

Claims 47-48 and 52 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Sawa (US Patent 5,228,190) in view of Veale (US Patent 5,375,951).

The Examiner concedes that Sawa does not disclose “the interior region [of the lower nest] having an elongated channel and evacuating the elongated channel to immobilize the first metal panel in the manner claimed by the Applicant.” For this the Examiner looks to the teaching of Veale as disclosing an automated milling machine with a nest or bed 11 including a vacuum channel 12, raised panel 13 and vacuum hole 14 connected via tube 15 to vacuum system 16. Applicant respectfully traverses the Examiner’s rejection.

At the outset, Applicant agrees with the deficiencies of Sawa noted by the Examiner. Applicant further points out that Sawa uses fixtures **6** extending up along the sides of the lower die **5** to secure the workpiece in place. Thus, Applicant submits that

Sawa fails to appreciate the problems associated with lateral obstructions of a roller-hemming system, much less a solution to this problem.

Applicant submits that the teaching of Veale could not be combined with the teachings of Sawa to arrive at the method as defined in claims 47-48 and 52. Importantly, Veale, like Sawa fails to appreciate the problems associated with lateral obstructions, much less a solution to this problem. In fact, lateral access is unimportant to the milling operations described in Veale which only require access to the workpiece from above. For this reason alone, Applicant submits that Veale in combination with Sawa does not render obvious the structure and methods recited in the pending claims.

Veale also does not disclose the structure recited in the claimed method. The nest or bed 11 does include a sealed elongated channel. Instead, Veale describes a series of interconnected channels forming an array of support post 13 in the wooden bed 11. A cover 17 with holes 18 is placed on top of the bed 11. A workpiece to be machined is placed onto cover 17 and held down by the suction created through the holes 18. See, Veale, Col. 4, lines 13-30. Thus, Veale does not teach or suggest “a sealed elongated channel is formed between said pad and said first metal panel adjacent a portion of said material-contacting area.”

While one might consider any one of the interconnected channels to be an elongated channel, in the final configuration, the series of channels cannot be considered a sealed, elongated channel. Moreover, the series of channels fails to teach or suggest any form of a sealed channel, much less one formed in part by the first metal sheet (i.e., the workpiece that is placed on top of cover 17). Specifically, Veale fails to describe a system which conforms to the workpiece, but is instead flat. Veale fails to

describe a system which generates a downward clamping force sufficient to laterally immobilize the workpiece during milling. The milling operation described in Veale, and in particular the routing bit 10, would provide a significant downward force such that the vacuum pad and vacuum system would not provide the recited limitation. Lastly, Veale fails to provide any teaching or suggestion of a pad, seal or any other compliant member for forming and maintaining an adequate clamping configuration or protection against marring of the show surface of the workpiece.

Applicant further submits that one of ordinary skill in the art would not look to the teachings of Veale to modify the lower die of Sawa since such a modification would be inoperable for the recited method. In particular, a modification of lower die in Sawa in accordance with teaching of Veale would yield a method of forming wherein the metal sheet panel is placed directly on a metal die with a series of discrete vacuum holes. Clearly, such a modification would lack the sealed elongated channel recited in the subject claims. Moreover, the modified metal die would be incapable of immobilizing the first metal sheet against lateral forces and would result in unacceptable damage to the finish and show surface of the first metal sheet.

For all of the foregoing reasons, Applicant submits that the subject matter recited in Claims 47-48 and 52 do not and could not properly result from a combination of the teachings from Sawa and Veale. For each of the above-stated reasons, Sawa alone or in combination with Veale fail to disclose or suggest both the structure and the function recited in the claims as originally filed, amended and presently pending.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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